

REMARKS

In accordance with the foregoing, the claims **1-6** and **16-19** have been withdrawn, the claims **13-15** and **24** have been amended, and claims **7-12** and **20-23, 25 and 26** have been cancelled. Therefore, claims **13-15** and **24** are pending and under reconsideration, which is respectfully requested.

No new matter has been added and accordingly, entry and approval of the claims **13-15** and **24** are respectfully requested.

STATUS OF THE CLAIMS:

Claims **1-6** and **16-19** are withdrawn.

Claims **11-15** and **20-26** are rejected.

Claims **7-12** and **20-23, 25 and 26** are cancelled.

Claims **13-15** and **24** are amended.

ITEM 1: REJECTION OF CLAIMS 11-15 AND 21-26 UNDER 35 U.S.C. 112, SECOND PARAGRAPH AS BEING INDEFINITE FOR FAILING TO PARTICULARLY POINT OUT AND DISTINCTLY CLAIM THE SUBJECT MATTER.

In accordance with the Examiner's suggestions, applicants have canceled claims **11-12** and **21-23, 25 and 26**; incorporate the limitation of claim **1** into claim **13**, and make claims **14** and **15** depend on claim **13**. Therefore, the rejection should be withdrawn.

Regarding to the term "reduced pressure" in claims **13, 14, 22, and 23**, applicants have changed "reduced pressure" to "in a pressure less than atmospheric pressure" in claim **13** as the Examiner suggested. Therefore, the rejection should be withdrawn.

ITEM 2: REJECTION OF CLAIMS 11, 13, AND 15 UNDER 35 U.S.C. 102(b) AS BEING ANTICIPATED BY EDEN ET AL (US 4,755,397).

As stated above, claim **11** has been cancelled.

The Examiner asserts that **Eden et al.** teach the encapsulation of materials in starch, the encapsulation process involving slurrying the starch and material in water, injecting steam into the slurry to raise its temperature to the range of 120 to 180 °C. The pressure of the slurry is then reduced to atmospheric and the temperature reduced to below 112 °C. The starch particles can then be dried. Types of starch used include potato starch.

However, as shown in the claims, the method of current invention is to make **starch particles with a particle size of 50 to 500 µm having a structure indented in one or more parts**, while **Eden et al.** disclose a starch based particulate encapsulation process.

In addition, the method of current invention of claim **13** claims 3 steps of **(1) heat-treating a starch raw material at 100 to 130°C in a pressure less than atmospheric pressure**, (2) heating the starch raw material in the presence of water at 60 to 150°C to swell starch particles of the starch raw material, and (3) drying the swollen starch particles to obtain a powder mixture comprising starch particles and amylose and amylopectin which are present in the exteriors of these starch particles.

On the other hand, **Eden et al.** disclose a starch based particulate encapsulation process, which includes a step of slurrying the starch and the material to be encapsulated in water in a saturated aqueous solution of salt. However, when the salt is present, amylase is precipitated, so that the product obtained by the method is not the starch particles according to the present invention, i.e., starch particles with a particle size of 50 to 100 µm having a structure indented in one or more parts (see page 9 of the specification).

Moreover, in the method of the present invention of claim **13**, a starch raw material, which is not a slurry, is heat-treated at 100 to 130°C in a first heat treatment, and then the starch raw material in the presence of water (i.e. slurry) is heated at 60 to 150°C, while in the method of **Eden et al**, the starch raw material in the slurry state is heated at 120 to 180°C. Since the method of **Eden et al** does not comprise the first heat treatment step of heat-treating the starch raw material, which is not the slurry, at 100 to 130°C, the invention of claim **13** is novel over **Eden et al**.

Moreover, in the method of **Eden et al**, the slurry is completely gelatinized because the starch raw material in the slurry state is heated at 120 to 180°C without the first heat treatment step of the present invention. Consequently, in the method of **Eden et al**, satisfactory release-sustaining properties, which are effects of the present invention, cannot be achieved. According to comparative Example 8 of the specification, when the slurry was completely gelatinized by heating at 90°C, the starch powder had a collapse time of 5 hr or less and exhibited no release-

sustaining properties at all. Accordingly, when the slurry is heated at 120 to 180°C, which is higher than 90°C of comparative Example 8, it is naturally understood that the slurry is completely gelatinized and hence the starch powder exhibits no release-sustaining properties.

Furthermore, according to page 9, line 13 to page 10, line 4 of the specification, the satisfactory sustained-release properties can be imparted by restricting the particle size of the starch particles in the range of 50 to 500 µm. As mentioned above, the particle size of the starch particles in the currently amended claim 13 is 50 to 500 µm, which particle size is not described in **Eden et al.**

Therefore, the currently amended independent claim 13 and claims 15 and 24, which depends on claim 13, are novel and unobvious over **Eden et al.**

Since **Eden et al.** does not anticipate the instant invention of claims 13 and 15, withdrawal of the rejection of claims 13 and 15 under 35 USC 102(b) is respectfully requested.

ITEMS 3: REJECTION OF CLAIMS 11-15 and 20-26 UNDER 35 U.S.C. 103(a) AS BEING UNPATENTABLE OVER EDEN ET AL. (US 4755397) IN VIEW OF TSAUR (US 6906016).

As mentioned above, the invention of **Eden et al** does not disclose and/or suggest the instant invention of claim 13.

The Examiner asserts that **Tsaur** teaches of personal care products comprising emulsions stabilized by starches and fatty acids. The starches are used as a structuring system. The Examiner also asserts that **Tsaur** teaches that the starch functions as a structuring agent when it is highly swollen by water which can be obtained by heat, and that the starch swells to at least 800% by volume to form particles with a size of 2 to 300 µm.

Tsaur neither describes the characteristics of the present invention that the step of heat-treating the starch raw material, which is not the slurry, at 100 to 130°C, and then heating the starch raw material in the presence of water (i.e. slurry) at 60 to 150°C, nor describes the satisfactory release-sustaining properties, excellent pH stability and long-term stability, which are effects of the present invention. Therefore, the present invention could not have been easily conceived by one of ordinary skill in the art based on **Eden et al** in view of **Tsaur**.

Moreover, in **Tsaur**, the swollen starches are used as a thickening or structuring agent (column 10, lines 59-61 of **Tsaur**), while, in the present invention, the present application describes starches swollen for obtaining the satisfactory release-sustaining properties (page 26,

lines 20-25 of the specification), which is the effect of the present invention. Therefore, the object of swelling of the starches is totally different in **Tsaur**.

Furthermore, **Eden et al** is directed to a method for the encapsulation of materials having sustained-release characteristics, while **Tsaur** is directed to personal product liquid cleansing compositions. Therefore, one of ordinary skill in the art would not have combined **Eden et al** and **Tsaur** because these documents are totally different in their technical fields and objections.

Accordingly, Applicants respectfully submit that an obviousness rejection cannot be based on **Eden et al** in view of **Tsaur** and allowance of the amended independent claim **13**, and depending claims **14**, **15** and **24** is respectfully requested.

CONCLUSION

Thus, it is believed that all rejections have been removed, and the present application is now in condition for allowance.

Reconsideration and early favorable action on the claims are earnestly solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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